sidered to constitute a major biogeographical barrier between discrete cold and warm water, largely endemic, faunas. However, approximately three-fourths of the opisthobranchs occurring on the Atlantic side of the Cape Peninsula are also found in False Bay, on the Indian Ocean coast. Far more profound faunal differences occur between the largely endemic fauna of the eastern Cape Province and that of the Transkei coast, which consists largely of Indo-West Pacific taxa.

The opisthobranch fauna of southern Africa is composed of a unique blend of tropical, temperate and Antarctic taxa, which appears to be a result of both vicariant events and recent dispersal.

BURROWING ACTIVITIES OF PERIPLOMA MARGAR-ITACEUM (LAMARCK, 1801) (BIVALVIA: ANOMALO-DESMATA: PERIPLOMATIDAE). Joseph Rosewater, Smithsonian Institution, Washington, D.C.

Paper on pages 35-40.

A REVIEW OF THE BIVALVE GENERA AXINULUS VER-RILL & BUSH, 1898, LEPTAXINUS VERRILL & BUSH, 1898 AND ADONTORHINA BERRY, 1947 WITH NOTES ON A NEW SPECIES OF THYASIRIDAE. Paul H. Scott, Santa Barbara Museum of Natural History, California.

A new species of Thyasiridae has been found in deep water in the northeast Pacific. Generic placement of the species proved difficult as it exhibited characters of the genera *Axinulus*, *Leptaxinus* and *Adontorhina*. Type material of the three genera was examined to determine the correct generic placement for the new species. Inspection of the hinge plate proved to be the most useful character in differentiating the genera.

Distinctive characters of the genera are defined below.

Axinulus Verrill & Bush, 1898 (8 North American species, 7 species examined)

Type species Axinulus brevis V & B, 1898

hinge plate thin, smooth and edentulous

—minute hinge tubercles present in some species
Leptaxinus Verrill & Bush, 1898 (1 North American species)
Type species Leptaxinus minutus V & B, 1898

hinge plate narrow but well developed

- —right valve with small tubercle beneath umbo which fits into corresponding notch in the left valve hinge.
- —right valve with long lateral grooves along anterior and posterior of the hinge plate into which the shell margin of the left valve is seated.

Adontorhina Berry, 1947 (1 North American species)

Type species Adontorhina cyclia Berry, 1947

hinge plate broad with a unique granular appearance

—hinge granules distinct anteriorly, weakly expressed posteriorly

The new northeastern Pacific species has a broad granular hinge plate placing it in the genus *Adontorhina* Berry, 1947.

PREDATION OF MOLLUSCAN SPECIES BY THE HORSESHOE CRAB, *LIMULUS POLYPHEMUS*. George D. Buckley, Pleasant Bay Field Station, South Orleans, Massachusetts.

The horseshoe crab, *Limulus polyphemus*, has long been regarded to be a major predator on commercial shell-fish. Howsoever, biomedical researchers find *Limulus* blood so important that it has a market value of several thousand dollars per processed liter.

As part of a continuing study, the Pleasant Bay Field Station has researched the predator-prey relationship between the horseshoe crabs and molluscan species, at Pleasant Bay, Orleans, Massachusetts.

With the help of Earthwatch Expedition field assistants the following research regime was conducted:

- 1. Stomach contents were analyzed from 100 Limulus.
- Feeding observations were made in the field on 200 crabs.
- 3. Predator-prey studies were conducted using young and adult specimens of the polychaete genera *Nereis* and *Glycera*, the glass sea cucumber, *Leptosynapta*, the softshell clam, *Mya*, the quahog, *Mercenaria*, the razor clam, *Ensis*, and the gem clam, *Gemma*.

The results of stomach content analysis showed the horseshoe crab to be a carnivorous scavenger. The crabs fed on *Mya, Mercenaria,* and *Ensis* but also on the small bivalves *Solemya velum* amd most often *Gemma gemma,* the latter easily confused with seed quahogs. Also found were the annelid genera *Nereis, Arenicola, Glycera, Scoloplos,* and *Syllis,* and the holothuroid genus *Leptosynapta.* Quantities tended to be in close proportion to their relative abundance in the area from which the *Limulus* were collected. Small algae remnants were also present.

In the field, feeding observation confirmed the stomach content analysis. In predator-prey studies, *Limulus* "found" the worms and mollusks with equal rates of success. The most preferred bait was *Gemma gemma*. In all cases, prey less than 4 cm was preferred to larger individuals. Horseshoe crabs that were burrowed into the substratum were found not to be feeding in 52% of the individuals studied.

It is apparent that *Limulus* are a significantly lesser threat to commercial shellfish than previously believed. Indeed, they are a major part of the natural predator-prey relationships of bay ecology.

GROWTH IN MERCENARIA MERCENARIA (L.). Arnold G. Eversole, Lawrence W. Grimes, Clemson University, South Carolina and Peter J. Eldridge, National Marine Fisheries Service, Charleston, South Carolina.

Growth and survival of the hard-shelled clam, *Mercenaria mercenaria*, was determined for 13-month old individuals grown for 4.5 years in protected trays in a subtidal site of Clark Sound, South Carolina. Calculated annual mortality rate was 4%. No increase in mortality could be